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MEMORANDUM APR 21 1998

SUBJECT: Section 18-Use of Myclobutanil on Caneberries in Oregon

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A. Risk Characterization Summary

The proposed use of myclobutanil on caneberries in Oregon does not pose adverse effects to birds, mammals, or aquatic organisms. Risk to nontarget plants could not be assessed due to lack of data; therefore, risk to plants remains a possibility, which could be minimized by taking precautions to minimize spray drift. Risk to nontarget insects could not be assessed due to lack of data; therefore, risk to nontarget insects remains a possibility from the proposed use of myclobutanil.

Myclobutanil is relatively persistent, with an average field half-life of 129 days. The major route of dissipation is believed to be diffusion and dilution; myclobutanil appears to be resistant to most environmental breakdown processes.

B. Submission Purpose

The Oregon Department of Agriculture has applied for a special exemption to use Rally 40 WSP fungicide containing myclobutanil on a total estimated 730 acres of caneberries (520 acres of blackberries, 130 acres of boysenberries, and 80 acres of black raspberries) to treat orange rust (*Gymnoconia nitens)*. Applications will occur between May 1, 1998 and November 1, 1998. The maximum estimate for total required active ingredient is 456 lb for the season. This is based on

up to 5 applications of Rally 40 WSP at 5 oz.(0.125 lb ai) per acre applied by ground equipment at 10 to 14 day intervals. Applications are to be made when the first symptoms of the disease are seen, which will require an intensive scouting program. Applications may not occur within 1 day of harvest. Applications by air or through any type of irrigations system are prohibited. There are no pesticides currently registered for caneberries that are known to control orange rust. The only cultural control of orange rust is scouting and removal of infected plants, which may not be effective due to the extensive root system of the berry plants.

Product Information:

Product Name: Rally 40 WSP manufactured by Rohm and Haas Co.
Active Ingredient: Myclobutanil.....40%
Inert Ingredients.....60%

C. Environmental Assessment

1. Environmental Fate and Exposure Characterization

Environmental Fate Data:

- Stable to hydrolysis at pH 5, 7, and 9
- Stable to photolysis in water
- Photolytic soil half-life = 143 days
- Aerobic soil half-life = 66 days
- Anaerobic soil half-life = no degradation at 62 days
- Terrestrial Field Dissipation half-life = 292 days in sandy loam, and 92 days in loam soil. No apparent leaching was observed at either site.
- Solubility = 142 ppm
- Leaching: myclobutanil is moderately mobile (K_ds = 1.46 - 9.77 for adsorption and 0.47 - 4.18 for desorption in 5 soils), with a median K_{oc} = 581. The degradate (1,2,4-triazole) is considered highly mobile, with a median K_{oc} = 104 (average of 112) .

2. Estimated Environmental Concentrations

Aquatic

The aquatic EECs presented below were generated using the GENEEC computer program developed by EFED. This program uses a variety of environmental fate parameters in conjunction with the application rate to estimate the exposure to aquatic organisms from runoff.

GENEEC EECs (µg/L) for Myclobutanil Use on Caneberries

INPUT VALUES

RATE (#/AC) ONE(MULT)	APPLICATIONS NO.-INTERVAL	SOIL KOC	SOLUBILITY (PPM)	% SPRAY DRIFT	INCORP DEPTH(IN)
.125 (.563)	5 10	581.0	142.0	1.0	0

FIELD AND STANDARD POND HALFLIFE VALUES (DAYS)

METABOLIC (FIELD)	DAYS UNTIL RAIN/RUNOFF	HYDROLYSIS (POND)	PHOTOLYSIS (POND-EFF)	METABOLIC (POND)	COMBINED (POND)
129.00	0	N/A	0.00-0.00	0.00	0

GENERIC EECs (IN PPB)

PEAK GEEC	AVERAGE 4 DAY GEEC	AVERAGE 21 DAY GEEC	AVERAGE 56 DAY GEEC
10.55	10.37	9.55	8.41

Terrestrial--Acute

Vegetation Type	Peak Maximum EEC[1]	Average Maximum EEC[1]
Short grass	135 ppm	90 ppm
Tall grass	62 ppm	41 ppm
Broadleaf plants/insects	76 ppm	50 ppm
Fruits/seeds	9 ppm	6 ppm

[1]From FATE program-- based on 5 applications at 5 oz product (0.125 lb ai)/A with a 10-day application interval. Initial concentration was the maximum Kenaga value for the vegetation type. Average EEC is for a 60-day application period.

Terrestrial--Chronic

Vegetation Type	Peak Mean EEC[1]	Average Mean EEC[1]
Short grass	48 ppm	32 ppm
Tall grass	20 ppm	13 ppm
Broadleaf plants/insects	25 ppm	17 ppm
Fruits/seeds	4 ppm	3 ppm

[1]From FATE program--based on 5 applications at 5 oz product (0.125 lb ai)/A with a 10-day application interval. Initial concentration was the mean Fletcher value for the vegetation type. Average EEC is for a 60-day period from the initial application.

3. Ecological Toxicity Data Summary

The following toxicity data has been reviewed in conjunction with registration of myclobutanil.

Terrestrial Wildlife Toxicity Data

Common Name	%AI	Toxicity	NOEL	EPA-ID	CATEGORY
Bobwhite Quail	84.5	LD_{50} 510 mg/Kg		0144286	C
Bobwhite Quail	84.5	LC_{50} >5000 ppm		0144287	C
Mallard Duck	84.5	LC_{50} >5000 ppm		0144287	C
Bobwhite Quail	94.2	LOEC >260 ppm	260 ppm	43087901	S
Mallard Duck	94.2	LOEC >260 ppm	260 ppm	43087902	S
Laboratory rat	91.9	Acute oral LD50=1360 g/kg		006370	C
Laboratory rat	84.5	2-gen. Repro LOEL=1000 ppm	200 ppm	004936	C
Laboratory rat	84.5	2-gen. Systemic LOEL=200 ppm	50 ppm	004936	C

Aquatic Organism Toxicity Data

Common Name	%AI	Toxicity	NOEL	EPA-ID	Category
Bluegill sunfish	84.5	96 HR LC50=2.4 ppm		0144285	C
Rainbow trout	84.5	96 HR LC50=4.2 ppm		0141677	C
Water flea	84.5	48 HR EC_{50} =11 ppm		0141678	C
Sheepshead minnow	93	96 HR LC_{50} =4.7 ppm		42747903	C
Eastern oyster	93	96 HR EC_{50} =0.68 ppm		42747901	S
Mysid	93	96-HR LC50 = 0.24 ppm		42747902	C
Fathead minnow		Early life LOEC=2.2 ppm	0.98 ppm	0266119	S

4. Hazard Assessment

Terrestrial-Acute Risk Quotients (RQs)

Vegetation Type	Peak Maximum EEC	Avian acute RQ---max	Mammal acute RQ--max[1]
Short grass	135	0.03	0.09
Tall grass	62	0.01	0.04
Broadleaf plants/insects	76	0.02	0.05
Fruits/Seeds	9	0.00	0.01

[1] Based on a calculated mammal LC50 of 1432 ppm for a small mammal consuming 95% of its BW (LD50/% BW consumed)

No acute levels of concern (LOCs) are exceeded for birds or mammals from the proposed use of myclobutanil on caneberries.

Terrestrial-Chronic Risk Quotients

Vegetation Type	Average Mean EEC[1]	Avian Chronic RQ	Mammalian Chronic RQ: Reproductive	Systemic
Short grass	32 ppm	0.12	0.16	0.64
Tall grass	13 ppm	0.05	0.06	0.26
Broadleaf plants/insects	17 ppm	0.06	0.08	0.34
Fruits/seeds	3 ppm	0.01	0.02	0.06

[1] Average concentration over time (60 day period)--modeled using FATE program with mean Fletcher value as initial input.

No chronic LOCs are exceeded for birds or mammals from the proposed use of myclobutanil on caneberries.

Hazard to Aquatic Organisms:

Acute RQs

Species	LC_{50} or EC_{50} (ppm)	Peak EEC (from GENEEC) (ppm)	RQ
Bluegill sunfish	2.4	0.010	0.00
Rainbow trout	4.2	0.010	0.00
Water flea	11	0.010	0.00

Sheepshead minnow	4.7	0.010	0.00
Eastern oyster	0.68	0.010	0.01
Mysid	0.24	0.010	0.04

No LOCs are exceeded for aquatic organisms from the proposed use of myclobutanil on caneberries.

Chronic: The fish early life-stage NOEC (0.98 ppm) was compared to the 56-day GENEEC value (0.008 ppm); no chronic hazard was indicated for the proposed use of myclobutanil on caneberries.

Hazard to Terrestrial Plants:
No data on toxicity of myclobutanil to terrestrial species of plants has been reviewed to date. Therefore, no conclusions regarding possible hazard to these species groups can be made at this time.

Hazard to Non-Target Insects Toxicity Data: - No data has been received for review by the Agency regarding toxicity to non-target insects. Therefore, no conclusions regarding possible hazard to these species groups can be made at this time.

Endangered Species: No endangered species concerns for birds, mammals, or aquatic animal species are indicated for the proposed use of myclobutanil on caneberries in Oregon. Risk to endangered plants and insects cannot be assesssed due to a lack of data; therefore, the possibility of hazard to these species can not be precluded for the proposed use of myclobutanil. There are endangered plant and insect species present in the counties covered under this exemption. These are listed below.

Polk County: Nelson's Checker-mallow (plant)
Bradshaw's Lomatium (plant)

Yamhill County: Oregon Silverspot Butterfly (insect)
Nelson's Checker-mallow (plant)

D. Labeling Recommendations

Section 18 Label
Do not apply directly to water, or to areas below the mean high-water mark. Do not contaminate water when disposing of equipment washwater or rinsates.

Product Label
For terrestrial uses, do not apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water when disposing of equipment washwaters. Do not apply when weather conditions favor drift or runoff from areas treated.